UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,597	07/18/2003	Donald David Karlov	MSFT-1794/303770.1	4306

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EXAMINER
NGUYEN, HAU H

ART UNIT	PAPER NUMBER
2628	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>10 January 2007</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-29</u> is/are pending in the application.

    4a) Of the above claim(s) <u>2-8,14-19,23 and 24</u> is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1,9-13,20-22 and 25-29</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

The response filed on January 10, 2007 has been fully considered in preparing for this Office

Action.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1, 9-13, 21-22, 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Lin (U.S. Patent No. 6,016,151) in view of Pinedo et al. (U.S. Patent No. 5,224,210), and

further in view of Wada (U.S. Patent No. 7,116,339).

As per claim 1, Lin teaches a method for rendering graphics on a display device for a

computer system having a central processing unit 80 (Fig. 3), system random access memory 82,

graphics card 40 comprising a graphical processing unit (such as 50, 51), a video random access

memory (not shown but it is inherent for a typical computer system with a graphics processor to

store the data), and a frame buffer 84, the method comprising:

rendering a complex graphic in the system random access memory with the central

processing unit, the complex graphics including at least one of shading, texturing, alpha-

blending, anti-aliasing, and sub-pixel manipulation; and

copying said complex graphic from the system random access memory directly into the

frame buffer by the central processing unit (col. 6, lines 33-58). (*Lin does disclose the host*

CPU's software performs its own triangle edge and span walking and calculates R, G, B, depth

Z, blending attribute alpha, fog, and specular components Rs, Gs, Bs. (col. 8, lines 54-59).

Thus, Lin fails to teach copying directly into the frame buffer bypasses the graphical

processing unit. However, Pinedo et al. teach this feature. As shown in Fig. 1, Pinedo et al. teach

a method for rendering graphics, comprising a central processing unit (host processor 20), a

graphics processor (rendering circuitry 60) wherein the host processor bypasses the graphics

pipeline to write directly into the frame buffer 70 (col. 8, lines 19-27).

Therefore, it would have been obvious to one skilled in the art to utilize the method as

taught by Pinedo et al. in combination with the method as taught by Lin in order to reduce the

pipeline overhead and provide fast block operation, thereby enhancing rendering performance

(col. 8, lines 22-27).

The combined Lin and Pinedo fails to discloses "...copying directly to the frame buffer

completely bypasses the graphical processing unit *to render the complex graphic.*

However, Wada teaches a method an image rendering method wherein, as shown in Figs.

12 and 13, the CPU 123 does all the complex graphics rendering including shading, texturing,

alpha blending, and sub-pixel manipulation (see disclosure of Figs. 12 and 13).

Since Lin (as cited above) teach the CPU performs shading and alpha blending but fails

to teach the step of blending the color pixel with the generated pixel *by* the CPU, it would have

been obvious to one skilled in the art to utilize the method of completely rendering complex

graphics by the CPU as taught by Wada incorporating the method as taught by Lin, (in

combination with the method of copying graphics data directly to the frame buffer bypassing

graphics processing unit as taught Pinedo), so that the CPU can perform 3D graphics processing on its own without the use of the graphics processing unit.

As per claim 9, Lin also teaches said complex graphics comprising compositing of overlays (col. 3, lines 10-13).

As per claim 10, Lin further teaches the computer system comprising an AGP port between the CPU, the main memory, and the graphics card (col. 11, lines 59-61).

As per claims 11 and 12, as cited above, Lin teaches the graphics card comprising a graphics accelerator/ graphics coprocessor 40.

Claims 13, 21-22, 25-28, which are similar in scope to claims 1, 9-12, are thus rejected under the same rationale.

3.   Claims 20 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. Patent No. 6,016,151) in view of Pinedo et al. (U.S. Patent No. 5,224,210), further in view of Wada (U.S. Patent No. 7,116,339), and further in view of Robertson et al. (U.S. Patent No. 5,670,984).

As per claims 20 and 29, as cited above, the combined references of Lin, Pinedo and Wada teach all the limitations of claims 20 and 29, except that the complex graphics comprises an orientation-change graphic. However, this is what Robertson et al. teach. Robertson et al. teach a graphics processing method wherein the CPU performs orientation-change graphics and writes to the frame buffer (Figs. 6, 7A-B, col. 5, lines 51-54). Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Robertson et al. in combination with the method as taught by Lin and Pinedo et al. in order to provide faster image transformation (col. 4, lines 38-47).

Response to Arguments

4.   Applicant's arguments with respect to claims 1, 9-13, 20-22, and 25-29 have been

considered but are moot in view of the new ground(s) of rejection.

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. See PTO-892 form.

Loo et al. (U.S. Patent No. 5,772,297) teach a computer system (Fig. 1), with system memory 26,

graphics card 16, including a video random access memory (VRAM 34).

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The examiner can normally be reached on MON-FRI from 8:30-5:30.
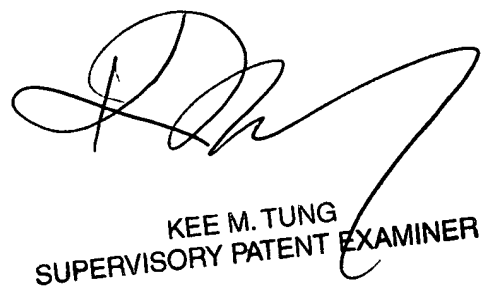
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794.

The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

H. Nguyen

3/20/2007

KEE M. TUNG
SUPERVISORY PATENT EXAMINER